

SUBREGIONAL CAPACITY-BUILDING WORKSHOP
ON FOREST BIODIVERSITY AND CLIMATE CHANGE
Singapore City, 2-5 September 2009

Forest-based Adaptation to Climate Change

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Who we are

One of 15 CG Centers; one of 14 CPF members

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CIFOR and the CGIAR



As a member of CPF family



Sub-plenary:

- Mitigation
- Adaptation
- DD and SFM



How we work

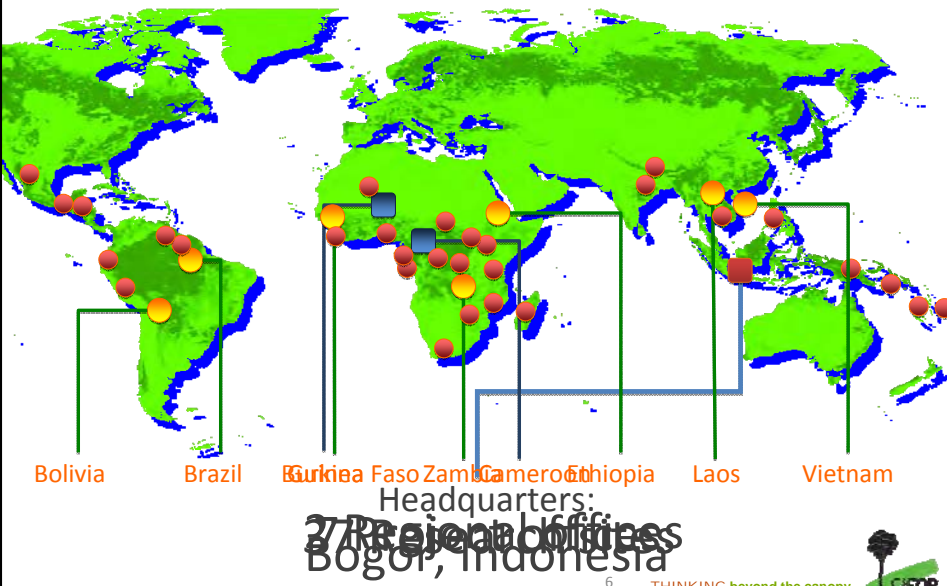


- 200 staff globally
- A 'centre without walls', working in partnership with:
 - governments
 - non-governmental organisations
 - international organisations
 - development agencies
 - civil society
 - foresters
 - media
 - private sector

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Where we work




Bolivia
Brazil
Burkina Faso
Zambia
Cameroon
Ethiopia
Laos
Vietnam

Headquarters:

27 Regional offices

Bogor, Indonesia

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Our strategic research agenda

- 1 Enhancing the role of forests in **mitigating** climate change
- 2 Enhancing the role of forests in **adapting** to climate change
- 3 Improving livelihoods through **smallholder** and **community** forestry
- 4 Managing trade-offs between **conservation** and **development** at the landscape scale
- 5 Managing impacts of globalised **trade** and **investment** on forests and forest communities
- 6 Sustainably managing tropical **production forests**



Research domain

- 1 Enhancing the role of forests in **mitigating** climate change

Research themes

- Developing procedures and best practices for estimating and managing carbon stocks in tropical forest landscapes
- Identifying policies, governance conditions and payment mechanisms that lead to effective implementation of REDD schemes
- Understanding the political economy and barriers to adoption of policies for efficient, effective and equitable REDD regimes





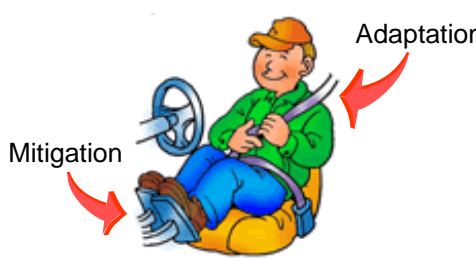
Research domain **2** Enhancing the role of forests in **adapting** to climate change

Research themes

- Bringing climate change adaptation into forest management
- Mainstreaming forestry into climate change adaptation

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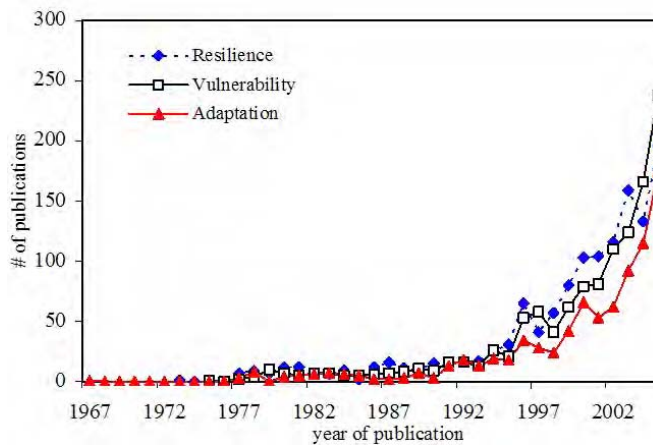
Outline



- Introduction
- Forests and adaptation to CC
- Reducing ecosystem vulnerability
- Adaptation measures
- Lessons learned
- Financing adaptation
- Ecosystem-based adaptation

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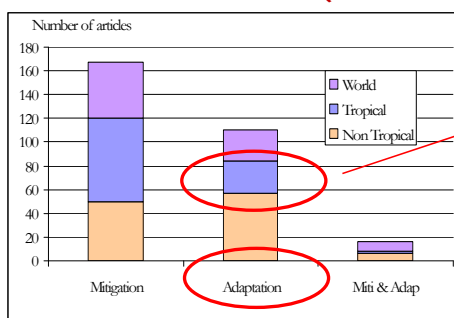
Adaptation – a growing issue



Source: Janssen (2007)

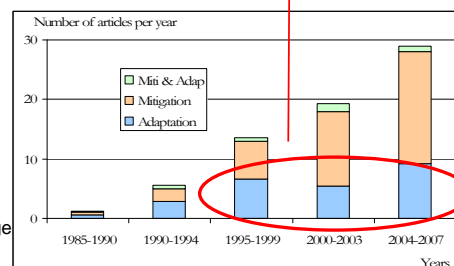


Forests and adaptation (in the literature)



Less work on forests and adaptation, especially in the tropics

Adaptation and forests:
Not growing



Forest and climate change in 4 journals

- Global Environmental Change
 - Climatic Change
 - Climate Policy
 - Mitigation and Adaptation Strategies for Climate Change
- 296 articles



Forests and adaptation (the scope)

- Adaptation for forests
 - Impacts of climate change on forests
 - How should forests and forest management adapt to CC?
- Forests for adaptation
(= Forest-based adaptation)
 - How forests have been playing their roles as “buffer”
 - How the community benefit from forest to adapt to CC
 - **This presentation**

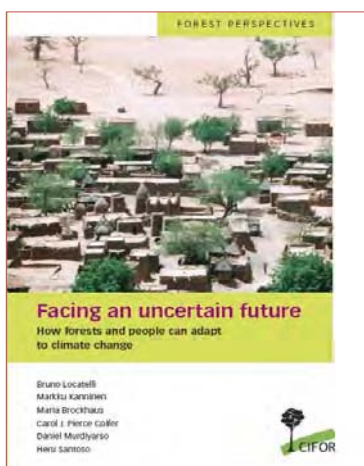


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Forests for adaptation



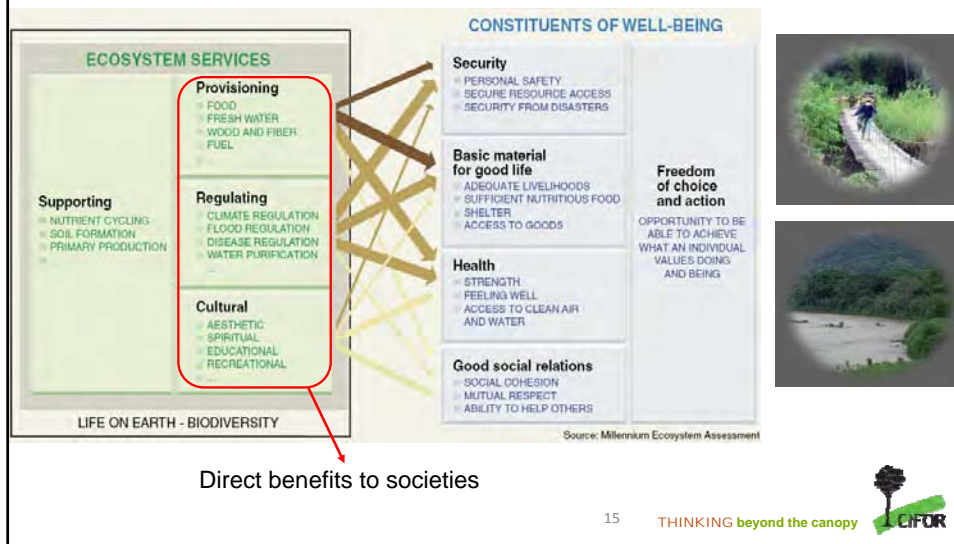
- Through the provision of ecosystem services provided by forests
- Through reducing ecosystem vulnerability
 - reducing exposure of the ecosystems to extreme events
 - reducing ecological sensitivity (e.g. flood, drought)
 - enhancing adaptive capacity of the society

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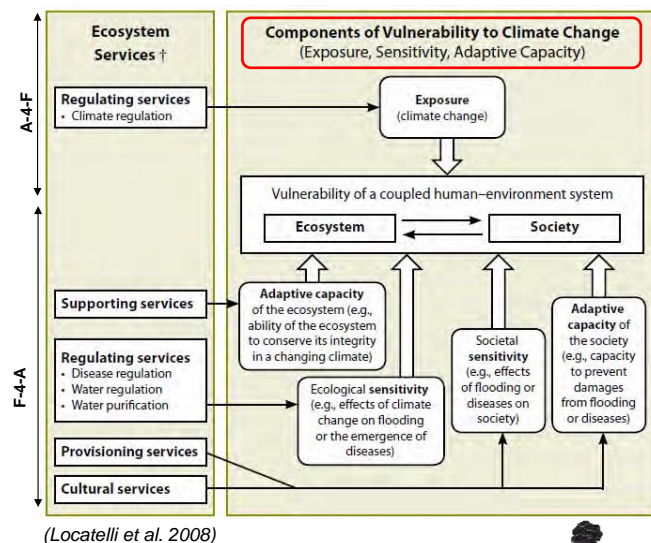
Forests: Providers of ecosystem services



Reducing ecosystem vulnerability (2)

Vulnerability:
 $= f(E, S, AC)$

- Exposure
- Sensitivity
- Adaptive capacity



Reducing ecosystem vulnerability (2)

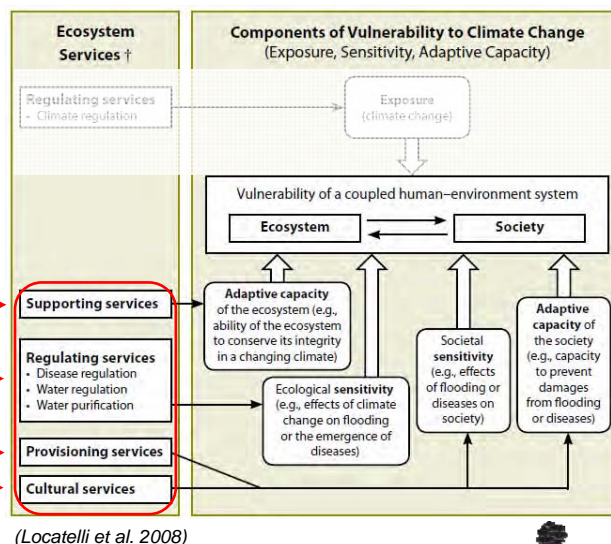
Examples

Habitat provision for reducing species vulnerability

Watershed protection for reducing landslides

NTFPs as safety nets for local communities

Strengthening social cohesion



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Adaptation measures: Cameroon (1/2)

■ CoFCCA project (Congo Basin Forests and Climate Change Adaptation) in Cameroon, DRC, CAR

- Participatory Action Research with communities in the forest-savanna transition zone

■ Communities analyzing their vulnerability to climatic variability:

- Agriculture and livestock activities = very sensitive
- NTFP (non timber forest products) = less sensitive = safety net



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Adaptation measures: Cameroon (2/2)

- Technical options for agriculture and livestock
 - Crop selection, livestock management
- Management options for forests and NTFPs
 - Access, control, marketing... with measures at provincial or national level
 - As a way to reduce their vulnerability



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Adaptation measures: Costa Rica (1/2)

- TroFCCA project (Tropical Forests and Climate Change Adaptation) in 8 countries of Asia, West Africa, and Central America
 - Vulnerability of forests and forest-dependent sectors
 - Central America: emphasis on drinking water and hydropower
- Hydroelectric companies analyzing their vulnerability:
 - Trends: increasing intensity of precipitation
 - Siltation in dams: very high costs
 - Importance of upstream soil conservation is increasing



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Adaptation measures: Costa Rica (2/2)

- Better watershed management linked with forest management
- Payment for Ecosystem Services
 - Forest conservation
 - Forest restoration
 - Soil conservation in agriculture and agroforestry



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Adaptation measures: Indonesia and Philippines (1/2)

- Vulnerability of sloping areas from landslides
- Mapping of landslide risks
 - Human concentration
 - Land stability (geological characteristics)
 - Climatic patterns (extreme events)
- Documenting and enhancing local knowledge



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Adaptation measures: Indonesia (2/2)

- Mangroves = protective roles (> 80,000 km coastlines)
 - Species and rooting system
 - Depending on the coastal topography
- Sequester and store large amount of carbon
- Adaptation to CC-related sea level rise



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Lessons learned

- Need to link scales/levels
 - Upstream-downstream (policy – implementation)
 - Communities-provinces-countries
- Need to include ecosystem services in adaptation
 - Often more effective, efficient, and sustainable than infrastructure or technological options of adaptation
- Use innovative mechanisms for financing, including PES

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Financing adaptation

- Adaptation Fund Board
 - Guidelines to access the fund
 - Established accreditation panel
- Adaptation fund – available for LDCs
- Levy from CDM – 2%
- To date
 - Registered projects: 1699
 - Issued CERs: 308 million
 - Sale of CERs generate \$ 18.7 million
- Expected CERs until 2012: 1111 million
- Expected AF generated until 2012: Euro 300 million

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Ecosystem-Based Adaptation: a tentative definition

- EBA: Adaptation measures or policies that harness ecosystem services for adapting society to climate change
- EBA considers:
 - The vulnerability of ecosystems (to land-use change, over-harvesting, climate change, etc.).
 - The links between ecosystem services and societal vulnerability
 - The need to involve stakeholders and decision makers beyond the forestry sector in managing or protecting forest ecosystem services
- EBA is necessarily:
 - Multi sectoral (forest managers + forest communities + sectors beyond the forest sector)
 - Multi scale (local, meso/watershed, national, regional, international)

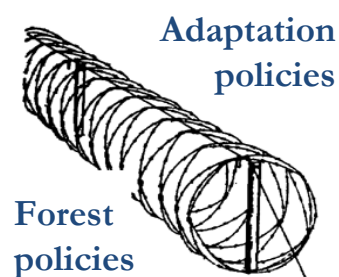
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Policies for Ecosystem-Based Adaptation

Ecosystem-Based Adaptation =
Bridging Forest and Adaptation Policy arenas



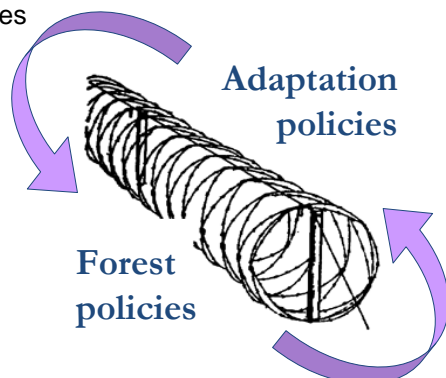
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Policies for Ecosystem-Based Adaptation

Mainstreaming adaptation into
forest policies



Mainstreaming forests
into adaptation policies

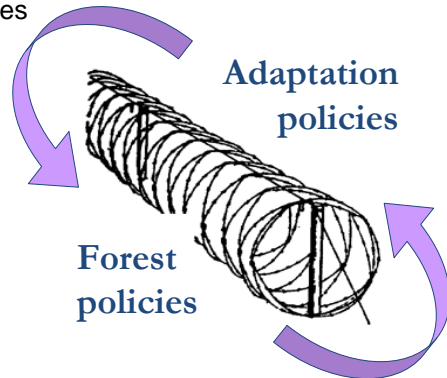
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Policies for Ecosystem-Based Adaptation

Mainstreaming adaptation into forest policies



Bringing adaptation into forest arena:

- Adaptation in NFP's
- Fire management

Bringing forests into adaptation arena:

- Forests in NAPA's
- Adaptation Fund etc. financing schemes

Mainstreaming forests into adaptation policies

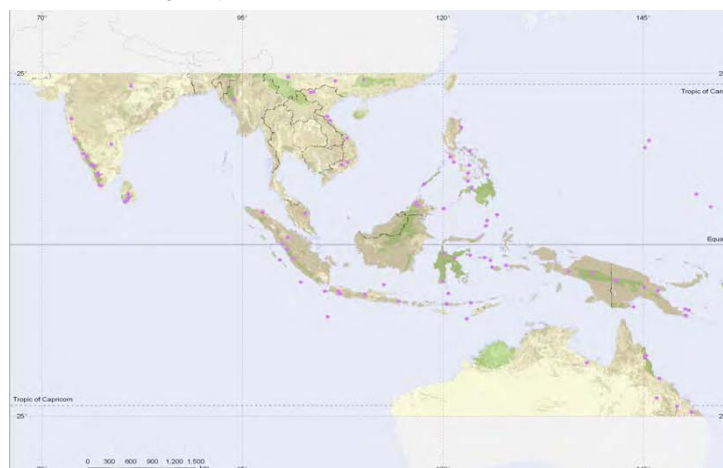
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EBA – Regional opportunities

Overlap of biologically-rich areas with carbon stores for Southeast Asia



Source: UNEP/WCMC, 2008.

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Thank you

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